Owner's Guide

CASCADE®
3072
HANDPIECE CONTROL SYSTEM

a-dec®

85.2620.00

Products List | Print | Table of Contents

Warranty Information

Serial Number _____

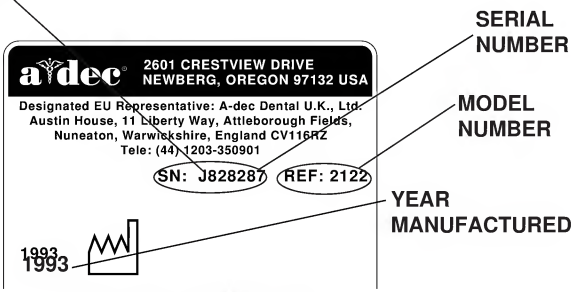
Model Number _____

Date Purchased _____

Date of Service	Model/Description of Service	Technician's Initials

ALPHABETICAL EQUIVALENT TO THE NUMERAL OF THE MONTH MANUFACTURED

A	January
B	February
C	March
D	April
E	May
F	June
G	July
H	August
I	September
J	October
K	November
L	December



SERIAL NUMBER IDENTIFICATION

Serial Number Location:

- Located on the underside of the control head.

For service information contact your local authorized A-dec dealer.

Check with local codes and A.D.A. (Americans with Disabilities Act) Requirements for Installation of this product.

A-dec warrants its products against defects in material or workmanship for one year from time of delivery (except for handpieces which have a warranty period of six months). A-dec's sole obligation under the warranty is to provide parts for the repair, or at its option, to provide the replacement product (excluding labor). The buyer shall have no other remedy. (All special, incidental, and coincidental damages are excluded.) Written notice of breach of warranty must be given to A-dec within the warranty period. The warranty does not cover damage resulting from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from the use of cleaning, disinfecting or sterilization chemicals and processes. The warranty also does not cover light bulbs. Failure to follow instructions provided in A-dec's Operation and Maintenance Instructions (Owner's Guide) may void the warranty.

NO OTHER WARRANTIES AS TO
MERCHANTABILITY OR OTHERWISE ARE MADE

a-dec®

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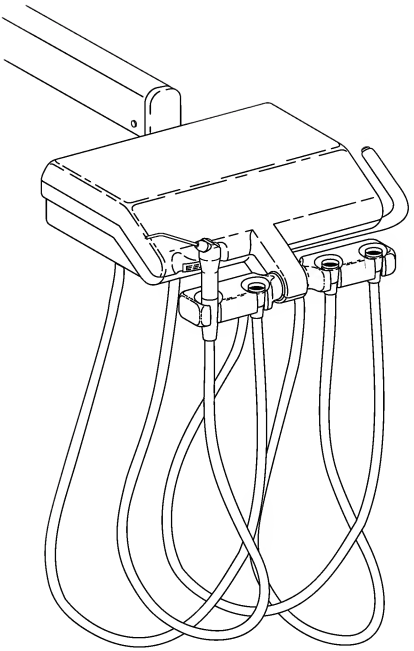

Cascade 3072
Handpiece Control System

Serial Number Location, Service Information, and Warranty Information are located on the inside front cover and front page.

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Your Cascade Handpiece Control System

Your Cascade 3072 Handpiece Control System is built around A-dec's Century Plus® control system for three handpieces. The system also includes the A-dec autoclavable syringe.

Handpiece activation is automatic. When you lift a handpiece from its holder the handpiece becomes active and will run when you press on the foot control disc *(refer to page 5)*.

Adjustment keys *(see Figure 1)* are provided for your use when making adjustments to the recessed controls, including; coolant air, coolant water, and handpiece flush. If the adjustment keys are ever misplaced, you can use a 1⁄8" hex key. You may order additional or replacement keys from your authorized A-dec dealer.

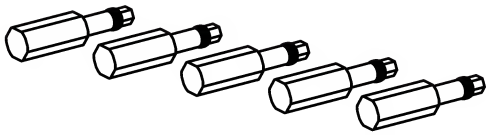

Figure 1. Autoclavable Control Keys

Handpiece Controls

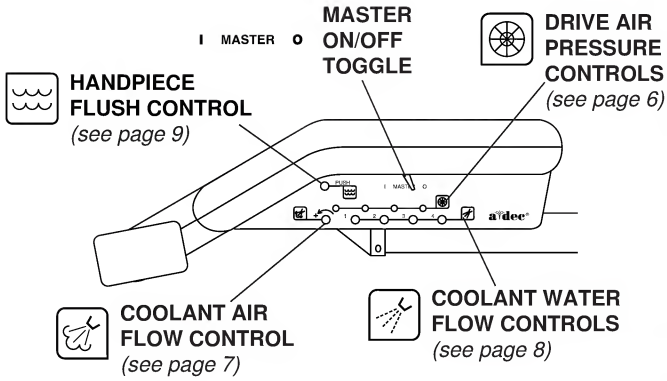

Figure 2. Handpiece Controls

Master On/Off Toggle

I MASTER O

The **master on/off toggle** *(see Figure 2)* turns air, water, and electricity on or off to the system.

CAUTION

The MASTER ON/OFF TOGGLE should be in the OFF (0) position whenever the unit is not in use.

This will prevent the possibility of water damage should a leak occur while the unit is unattended.

Making sure the unit is off will also prevent the possibility of self-activation and the resulting burn-out of your electrical accessories.

Drive Air Pressure Gauge

The drive air pressure gauge *(see Figure 3)* indicates, in psi and kg/cm2, the drive air pressure to the active handpiece *(refer to page 6)*.

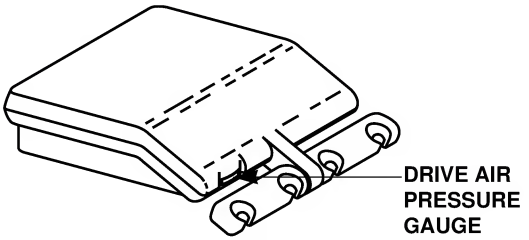

Figure 3. Drive Air Pressure Gauge

Foot Control

The foot control modulates drive air to the active handpiece and provides an air signal that activates the coolant air and coolant water flow. The foot control is operated by light foot pressure applied to any part of the foot control disc.

The foot control is equipped with a wet/dry toggle and can be equipped with an optional chip blower button *(see Figure 4)*.

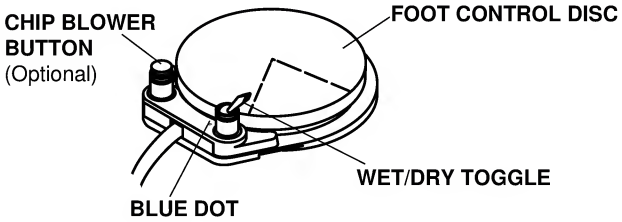

Figure 4. Foot Control

Wet/Dry Toggle. Allows you to shut off the coolant water to the handpiece without moving your hands from the oral cavity. Using your foot, move the toggle away from the blue dot to turn the coolant water OFF. Move the toggle toward the blue dot to turn the coolant water ON.

Chip Blower Button. Sends a jet of air through the handpiece when it is not running.

Drive Air Pressure Controls

The drive air pressure controls *(see Figure 2 on page 3)* are used to adjust the drive air pressure to each handpiece.

Adjust the drive air pressure to meet the handpiece manufacturer's dynamic drive air pressure specification. *Refer to the documentation that came with your handpiece for the dynamic drive air pressure specification.*

You will need a 3/32" hex key to complete this adjustment.

1. Install a bur in the handpiece.
2. Locate the drive air gauge on the front of the control head *(see Figure 3 on page 4)*.
3. Move the wet/dry toggle on the foot control *(see Figure 4 on page 5)* to the OFF position, *away from the blue dot)*.
4. Turn the drive air control clockwise until the valve seats.
5. Fully depress the foot control disc.
6. While running the handpiece, watch the drive air gauge and adjust the handpiece dynamic drive air pressure to meet manufacturer's specifications.
   - Turn the drive air control counterclockwise to increase drive air pressure flow.
   - Turn the control clockwise to decrease flow.

NOTE

Do not turn the control counterclockwise beyond the point where the drive air pressure no longer increases. The control adjustment screw may come completely out of the unit.

7. Repeat steps 1 through 6 for ***EACH*** handpiece.

Coolant Air Flow Control

The coolant air flow control *(see Figure 2 on page 3)* is used to adjust the coolant air flow to all handpieces.

You will need an adjustment key (see Figure 1 on page 2) or a 1⁄8" hex key to complete this adjustment.

1. Install a bur in the handpiece.
2. Locate the coolant air control *(see Figure 2)*.
3. Move the wet/dry toggle on the foot control *(see Figure 4 on page 5)* to the OFF position, *away from the blue dot*.
4. Insert an adjustment key, or a 1⁄8" hex key, into the coolant air flow control.
5. Fully depress the foot control disc to activate the handpiece.
6. Adjust the coolant air flow to fit your needs. A strong flow of air is recommended.
   - Turn the control clockwise to decrease the flow.
   - Turn counterclockwise to increase the flow.
7. The coolant air has been set for **ALL** handpieces.

Coolant Water Flow Controls

The coolant water flow controls are used to adjust the flow of coolant water to each handpiece *(see Figure 2 on page 3)*.

You will need an adjustment key (see Figure 1 on page 2) or a 1⁄8" hex key to complete this adjustment.

1. Install a bur in the handpiece.
2. Locate the coolant water flow controls *(see Figure 2 on page 3)*.
3. Move the wet/dry toggle on the foot control *(see Figure 4 on page 5)* to the ON position, *toward from the blue dot*.
4. Insert an adjustment key, or a 1⁄8" hex key, into the coolant water flow control for the handpiece being adjusted.
5. Fully depress the foot control disc to activate the handpiece.
6. Adjust the coolant water flow to fit your needs.
   - Turn the control clockwise to decrease the flow.
   - Turn counterclockwise to increase the flow.
7. Repeat steps 1 through 6 for **EACH** handpiece.

Handpiece Tubing Flush

The handpiece tubing flush system flushes more water through the tubings in less time than is normally possible when operating the foot control only. The handpieces should not be connected when flushing the tubings.

How Often Should the Handpiece Tubings be Flushed?

After Each Patient:

Flush the tubings for about 20-30 seconds.

At the Beginning of Each Day:

Flush the tubings for 2-3 minutes.

Flushing the Handpiece Tubings

Gather up all the handpiece tubings that use coolant water and hold them over a sink, cuspidor bowl or basin. Be sure you hold the tubings so that the water will be directed away from you and into the receptacle *(see Figure 5)*.

Insert an adjustment key or 1⁄8" hex key into the handpiece tubing flush control on the side of the control head. Push in and hold the key for the appropriate time required, either for flushing between patients or flushing at the beginning of each day, depending on the situation. Remove the key and replace the tubings in their holders.

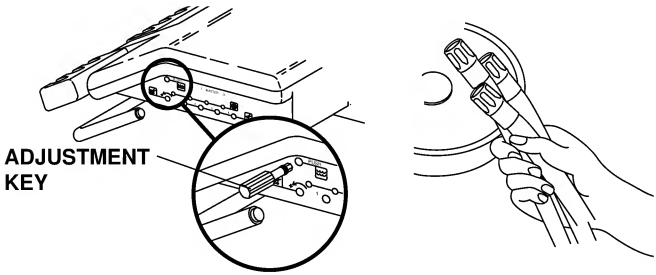

Figure 5. Handpiece Tubing Flush

Handpiece Holder Tension Adjustment & Positioning

The holder tension was set at the factory. However; if a holder is difficult to reposition or repositions too easily, the holder tension can be adjusted.

To adjust the holder tension:

- Loosening or tightening the tension adjustment screw shown in Figures 6A and 6B.

To reposition a holder:

- Rotate the holder to the desired angle.

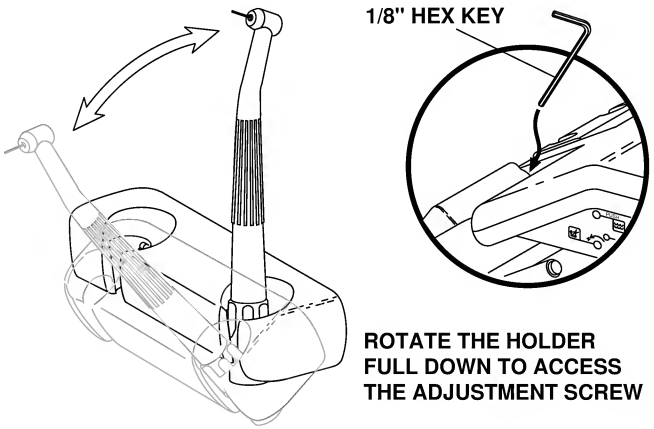

Figure 6A. Unitized Handpiece Holder

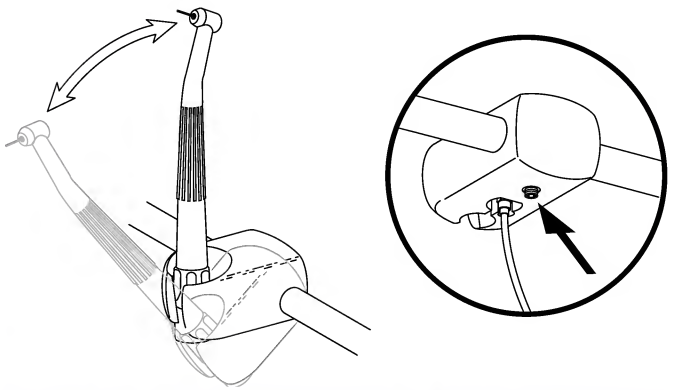

Figure 6B. Individual Handpiece Holder

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Handpiece Dry Block Conversion

Your Cascade handpiece control system has one to four handpiece control blocks with coolant water to the handpiece. In some cases a control block without coolant water, a dry block, is required. If you require a dry block (offering no water to the handpiece) on your handpiece control system, a dry block conversion kit has been included with your system.

Installing the Dry Block Conversion Kit

1. Move the master on/off toggle to the OFF position. Bleed the system water by operating the syringe and flushing the handpiece tubings.
2. Locate the handpiece control block position that will be the dry block. Access the control blocks underneath the control head.
3. Use a 3/32" hex key to remove the large red cartridge from the control block. Install the large black cartridge from the dry block conversion kit into the control block *(see Figure 7)*.
4. Use a 3/32" hex key to remove the small blue cartridge from the same control block. Install the small black cartridge from the dry block conversion kit into the control block *(see Figure 7)*.
5. Turn your handpiece control system on, then check the function of the dry block handpiece conversion. A small amount of residual water may be discharged from the handpiece tubing but should dry after a few seconds.

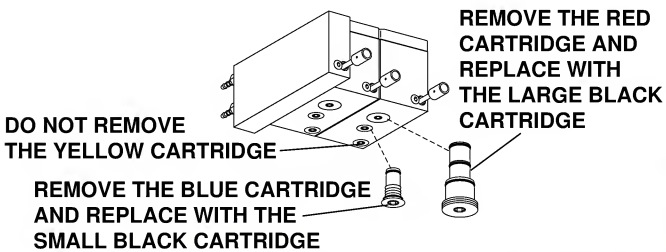
REMOVE THE RED CARTRIDGE AND REPLACE WITH THE LARGE BLACK CARTRIDGE
DO NOT REMOVE THE YELLOW CARTRIDGE
REMOVE THE BLUE CARTRIDGE AND REPLACE WITH THE SMALL BLACK CARTRIDGE

Figure 7. Handpiece Dry Block Conversion

Oil Collector

The oil collector on your unit needs to be changed once a week for normal usage. Change more often for heavier use.

1. Remove the oil collector jar from the unit and discard the old gauze (*see Figure 8*).
2. Fold in quarters a new two inch square gauze pad and place against the spring inside the jar.
3. Screw the oil collector jar onto the unit. Do not over tighten.

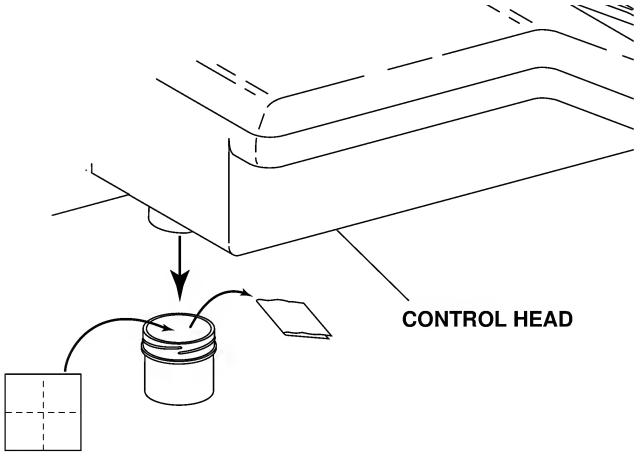

Figure 8. Oil Collector

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Autoclavable Syringe

To operate the syringe *(see Figure 9)*:

- Move the on/off toggle to the ON position.
- Air — Press the right button down.
- Water – Press the left button down.
- Spray – Press both buttons down.

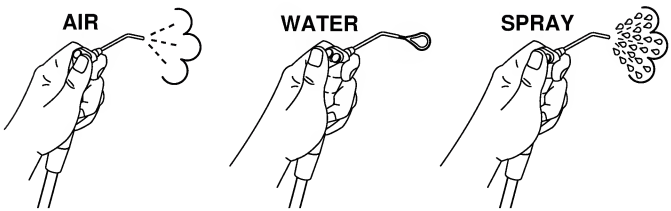

Figure 9. Autoclavable Syringe

Refer to your ***Autoclavable Syringe Owner's Guide*** *(A-dec Publication No. 85.0680.00)* for complete syringe operation and maintenance instructions.

System Air and Water Pressure Adjustment

For system air and water pressure adjustments, refer to your ***Floor Boxes Owner's Guide*** *(A-dec Publication No. 85.2611.00)*.

Care Instructions

For recommended asepsis instructions, refer to your ***Equipment Asepsis Owner's Guide*** *(A-dec Publication No. 85.0696.00)* .

For recommended self-contained water system care, refer to ***A-dec Self-contained Water System Owner's Guide*** *(A-dec Publication No. 85.0675.00)*.

Flexible Arm

Cascade 3072 Handpiece Control Systems are available on A-dec's flexible arm system. The flexible arm allows vertical and horizontal positioning of the control head to suit your practice.

Counterbalance Spring Adjustment

The flexible arm contains a spring that counterbalances the weight of the control head. The arm also contains a friction mechanism to stabilize the arm at the upper and lower extremes of its vertical arc.

If the arm tends to rise or drop when the arm brake is released, the counterbalance spring needs adjustment.

1. Remove the flexible vinyl cover from the underside of the arm *(see Figure 10)*. Gently pull the tubing and wiring in the arm slightly aside.

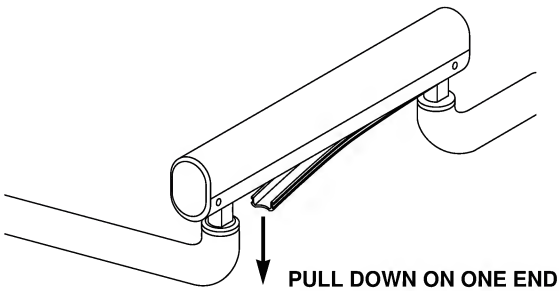

Figure 10. Flex Arm Cover

2. Raise the control head end of the flex arm until the friction adjustment socket head screw is accessible through the access hole in the arm *(see Figure 11)*. Using a 5/32" hex key loosen, but do not remove, the friction adjustment.

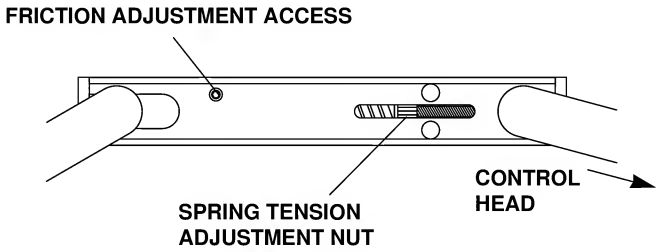

Figure 11. Tension Adjustment Locations

3. If the arm tends to drop, use a flat-blade screwdriver to turn the spring tension adjustment nut clockwise (as viewed from the control end of the arm, *see Figure 12)*. If the arm tends to rise, turn the adjustment nut counterclockwise. Lift the control end of the flex arm as high as possible while turning the adjustment nut, this relieves the spring tension allowing the nut to turn more easily.
4. While adjusting the spring tension, frequently move the arm through its vertical arc to see if it is adjusted properly.

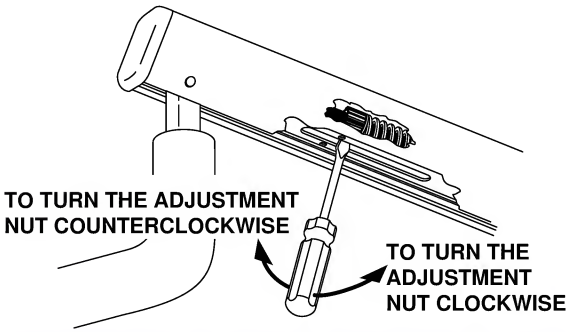

Figure 12. Spring Tension Adjustment

Counterbalance Spring Adjustment (continued)

5. When you are satisfied with the spring tension adjustment, move the arm alternately full up and then full down positions releasing the control head at each position. If the arm drops or rises when you let go of it in either position, tighten the friction adjustment. Be careful not to overtighten the adjustment as you may damage the friction mechanism.
6. Reinstall the flex vinyl cover *(see Figure 13)*. The cover is easily snapped back into place. Start by inserting one end of the cover into the arm and press it into place along the bottom of the arm.

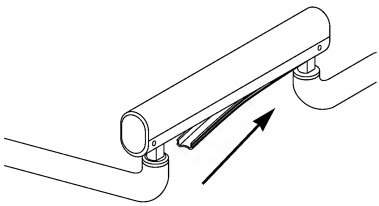

Figure 13. Install the Flex Arm Cover

Maintenance

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Also refer to the following A-dec documentation for more maintenance information:

Autoclavable Syringe
- ***Autoclavable Syringe Owner's Guide*** *.....85.0680.00*

Care Instructions
- ***Equipment Asepsis Owner's Guide*** *.....85.0696.00*
- ***Self-contained Water Owner's Guide*** *.....85.0675.00*

Power Supplies
- ***Floor Boxes Owner's Guide*** *.....85.2611.00*

Adjustments and Specifications

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(Refer also to your handpiece documentation for the manufacturer's maximum dynamic drive air pressure specification.)
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Coolant Water Flow .....page 8
Handpiece Holder .....page 10
Flex Arm Adjustments
Counterbalance Springe .....page 14

Service Requirements for Unit Operation:

Minimum Air:
2.50 cfm (70.80 l/min) at 80 psi (551 kPa)
Minimum Water:
1.50 gpm (5.68 l/min) at 40 psi (276 kPa)
Minimum Vacuum:
12 cfm (339.84 l/min)
at 8 inches of mercury (27 kPa)

Wall Mount Specifications:

100 lb (45.36 kg) maximum unit weight.

100 ft-lb (136 N·m) maximum moment created at the wall by the freestanding unit.

Weights of optional attachments:

Touch Pad: .5 lb (.23 kg)
Tooth Dryer: 1 lb (.45 kg)
Intra-Oral Light Sources: 1 lb (.45 kg)
Scaler: 2 lb (.91 kg)
Curing Light: 3 lb (1.36 kg)

Any optional non-A-dec attachments and/or accessories must comply with EN 60601-1 and EN 60601-1-2.

Also refer to the following A-dec documentation for more adjustment and specification information:

System Air and Water Pressure Adjustments
Floor Box
Owner's Guide *85.2611.00*

Specifications are subject to change without notice.

Identification of Symbols

Recognized by Underwriters Laboratories Inc. ® with respect to electric shock, fire and mechanical hazards only in accordance with UL 2601-1. Recognized with respect to electric shock, fire, mechanical and other specified hazards only in accordance with CAN/CSA C22.2, No. 601.1.

UL listed to US (UL 544) and Canadian (CAN/CSA C22.2, No. 125) safety standards.

Classified by Underwriters Laboratories Inc. ® with respect to electric shock, fire and mechanical hazards only in accordance with UL 2601-1. Classified with respect to electric shock, fire, mechanical and other specified hazards only in accordance with CAN/CSA C22.2, No. 601.1.

Conforms to European Directives *(refer to Declaration Statement)*

Protective earth (ground).

Functional earth (ground).

Attention, consult accompanying documents.

TYPE B APPLIED PART.

CLASS II EQUIPMENT.

Classification of Equipment (EN 60601-1)

Type of shock protection:
CLASS I EQUIPMENT
(Dental Chairs, Dental Lights, & Power Supplies)

CLASS II EQUIPMENT
(Chair, Wall, & Cart Mounted Delivery Systems)

Degree of shock protection:
TYPE B APPLIED PART (All products)

Degree of protection against water ingress:

ORDINARY EQUIPMENT (All products)

Mode of operation
CONTINUOUS OPERATION
(All models except Dental Chairs)

Mode of operation
CONTINUOUS OPERATION WITH
INTERMITTENT LOADING (Dental Chairs)

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